Program Area(s): Information Technology

Lesson Plan Title: App Inventor
Create a simple app using the online app inventor program for an Android device.

Estimated Time: 90 Minutes

Primary CTE Pathway(s) Explored: Programming/Software Development, Digital Media

Intended Learning Outcome(s):
- Explain how self-knowledge/self-efficacy (interest, abilities, and strengths) relates to career interests and selecting and achieving goals.
- Become acquainted with a wide range of occupations, CTE Pathways, career trends and emerging careers.
- Participate in experiential activities related to career expectations.
- Consider and explore nontraditional career opportunities.
- Explain how academic content knowledge and technical skills are used in various careers.

College and Career Awareness Pathway Standard(s):
Standard 7, Objective 2

Cross Curricular Integration:
- **21st Century or Interpersonal Soft Skills—critical thinking, collaboration, communication, creativity:**
- **Technology:**
- **Visual Arts:**

Career Opportunities in the CTE Pathway(s): Computer and information systems managers, marketing managers, instructional coordinators, computer programmers, computer systems analyst, software developers, Web developers graphic artists, mobile app developer, sound effect artists

Nontraditional Career Opportunities: Computer programmers, computer systems analysts, software developers, mobile app developers

STEM Specific Career Opportunities: Computer programmers, computer systems analysts, software developers, mobile app developers, Web developers

Methods (Approach to Teaching and Learning):
- Direct Instruction and Demonstration
- Activity/Inquiry/Practice Centered Instruction

Materials Needed:
- Computers with Internet access
- Google accounts

- Android device (phone or tablet) not required
- aiStarter installed (if no Android Device is available)

Vocabulary:
- App
- Component
- Event
- Media
- Procedure
- Variable

Prior Knowledge Required by Students:
- Students should know what a mobile app is and different types of devices that use apps.
- Students need to know how to use the Internet, save images, and navigate to find media files to import into projects.

Instructional Procedures:

1. Review with students the vocabulary on the "Student Worksheet".
2. Help students to navigate to MIT App Inventor.
3. Click on "Getting Started".
4. Have students review the "Designer and Blocks Editor". After looking over the info graphic, have them return to "Getting Started".
5. Have the students choose the "Beginner Tutorials", or you may choose to follow the "Sound Board Tutorial" included in this lesson plan. These tutorials will walk students through making a simple beginning app.
6. Students will need to navigate to MIT App Inventor again and click on the "Create" button.
7. Students will need to log in or create a google account. If they already have one associated with their school, this would be the best one to use.
8. Once logged in, they may follow the tutorials that you assigned or choose one of the three beginner tutorials.
9. If students complete the tutorial early, challenge them to try some different things with the blocks and adapt the app.
10. Score the student's app with the rubric.

Career Video
- Software Engineer
- Google's Driverless Car
- Craft Meets Tech at MIT
- IBM's Watson Supercomputers Destroys Humans in Jeopardy

Additional Resources:
- There are many things on Pioneer Library that you can use for these projects, from sounds to images. The link to soundzabound is a great resource for sounds, if you want students to find sounds to create their own soundboards.
- It may be helpful to have completed the "Photo Manipulation" project first, so students can upload and crop photos to use as button images as an extension to this activity.
- Do one of the more other available MIT App Inventor tutorials—Tutorials for App Inventor 2.

Assessment(s):
- Critical thinking demonstration (written, oral, or through demonstration or performance).
- Develop a portfolio of artifacts documenting concepts learned.